Amplifier Board Assembly, Part 2 Revised Jan. 10, 2019

All Versions

Wall of Sound.ca DIY all tube phono preamp project

Tools required:

Same as Part 1

Double-sided tape

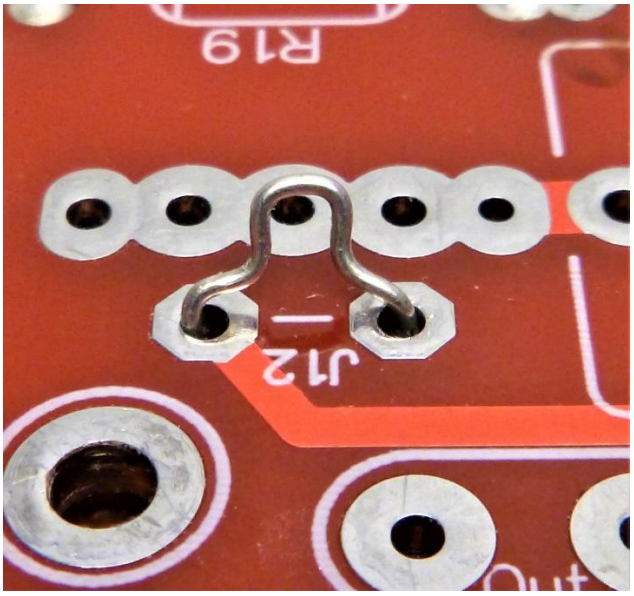
There is an option to have two output caps in parallel, C14 (large value) and C19 (small value). Shown below is the method to mount and connect the C19 caps. These steps may be deleted if you do not wish to install C19.

If jumpers and C19 are NOT used skip to page 4.

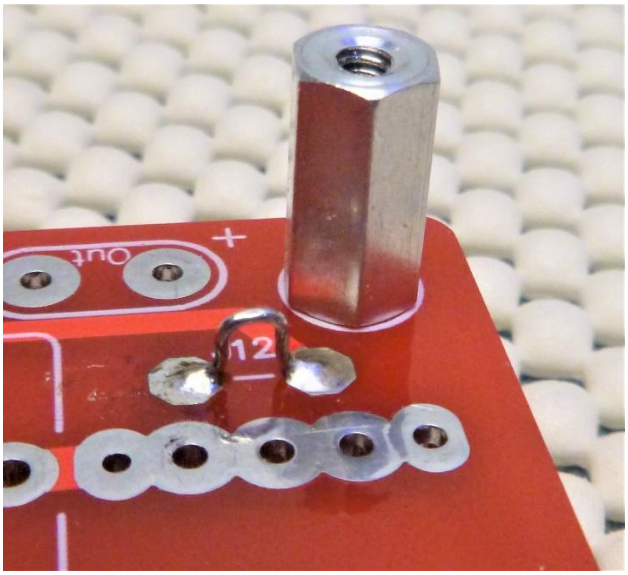
The jumpers shown below can be cut later if you want to take the small cap (C19) out of the circuit without physically removing it from the board.

Make two small jumpers as shown below. Cut-off resistor leads may be used.

Install on the bottom of the board at position J12, two places, as shown below. Trim the excess protruding from the top side of the board then solder. These jumpers and caps C19 are installed on the bottom because the main output caps, C14, require as much space as possible on the top side of the board.

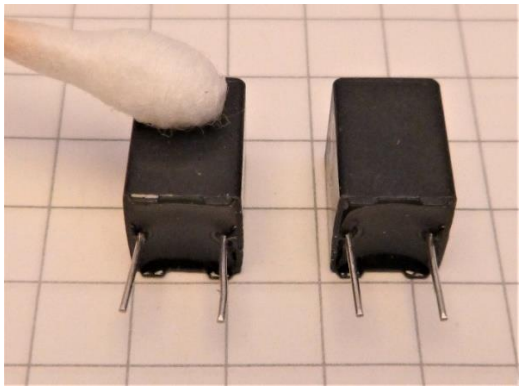


See below and attach a spacer to each corner of the board to protect caps C19 to while installing the other caps.

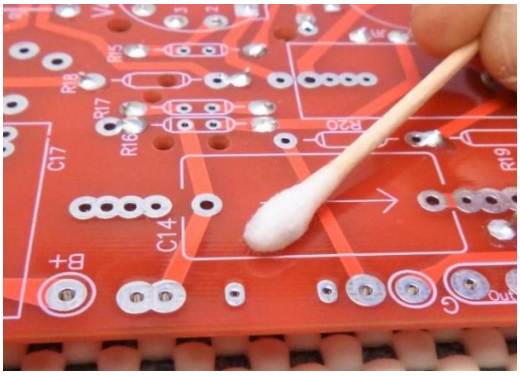


C19, 2 places, as supplied with the kit built here are small "box" caps that don't fit conveniently through the holes in the board. They will be attached to the board with double-sided tape. See below. Note that the C19s received with this kit are rated at 100 volts. At first this was a concern but when I checked the specs 100 volts is the AC voltage rating. The DC rating is higher and acceptable for this circuit.

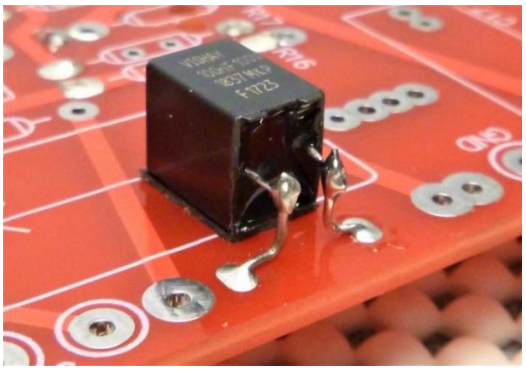
Wipe the sides shown of the caps C19 with alcohol. Apply tape and trim as necessary



Wipe the **bottom** of the board in the areas around C14 as shown below.



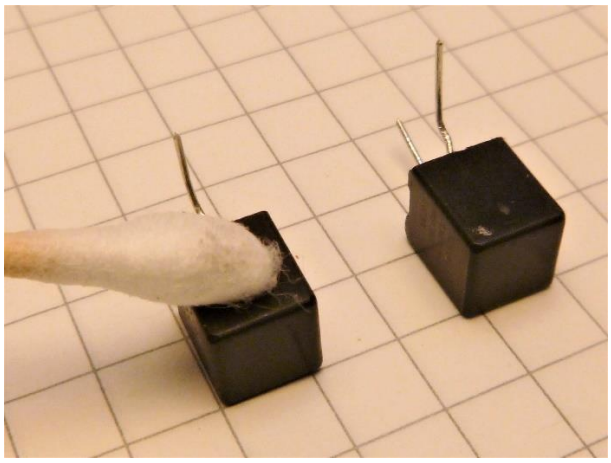
Attach the caps to the board as shown. Using cut-off resistor leads to connect the caps to the pads on the board.



If not installing J12 jumpers and C19 caps start assembly here. All parts from here on are installed on the TOP side of the board.

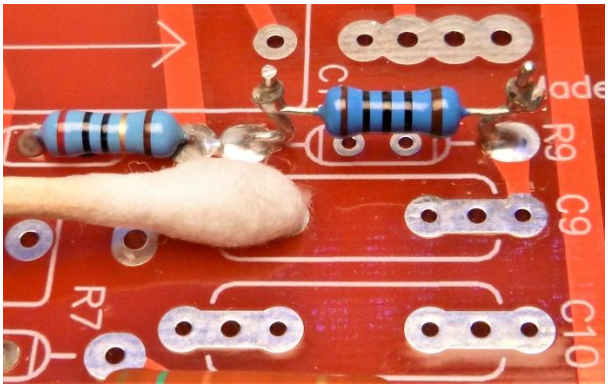
Caps C7 and C9, 2 each, as supplied with the kit built here are small "box" caps that don't fit conveniently through the holes in the board. They will be attached to the board with double-sided tape. See below. Note that the C7 caps received with the kit built here are rated at 100 volts. At first this was a concern but when I checked the specs 100 volts is the AC voltage rating. The DC rating is higher and acceptable for this circuit.

Bend one lead each as shown on caps C9 and wipe the side shown with alcohol.



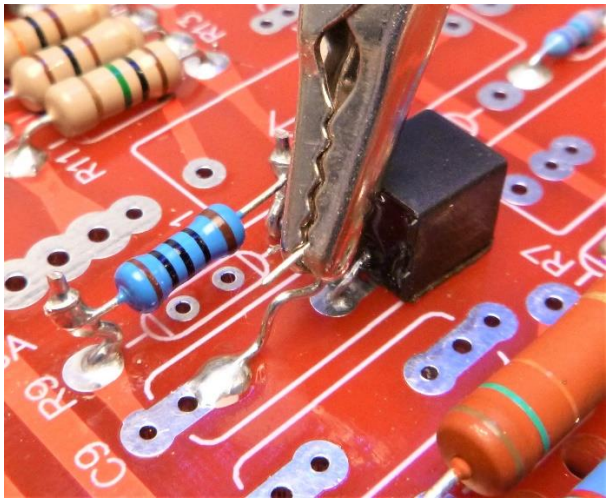
Apply double-sided tape to the wiped side and trim as necessary.

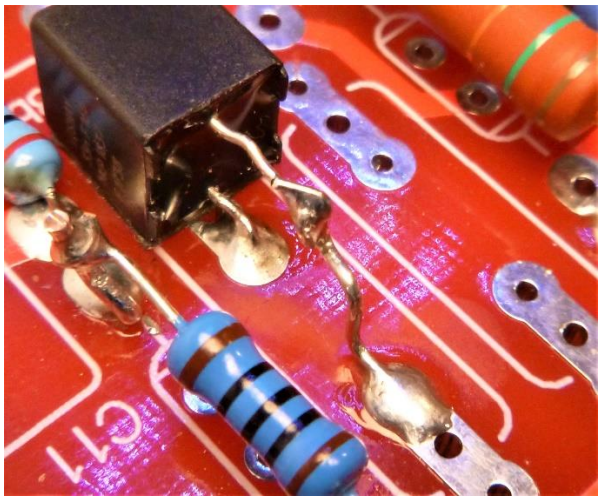
Clean the area on the board around C9 with alcohol, 2 places.



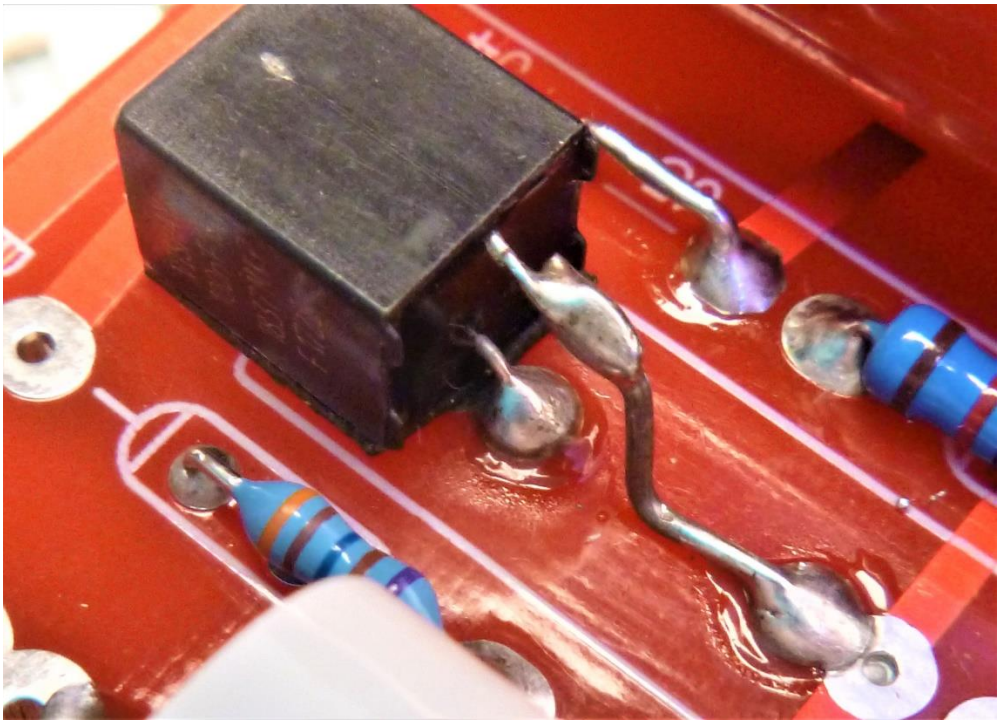
Attach the caps to the board with the bent lead in the hole shown, 2 places, below.

Solder the bent lead to the board and using an offcut resistor lead connect the other cap lead as shown, 2 places. Solder and trim excess. An alligator clip may be used as shown to hold the lead while soldering.





In the same manner clean, apply double-sided tape, assemble and connect the two C7 capacitors to the board, see below.

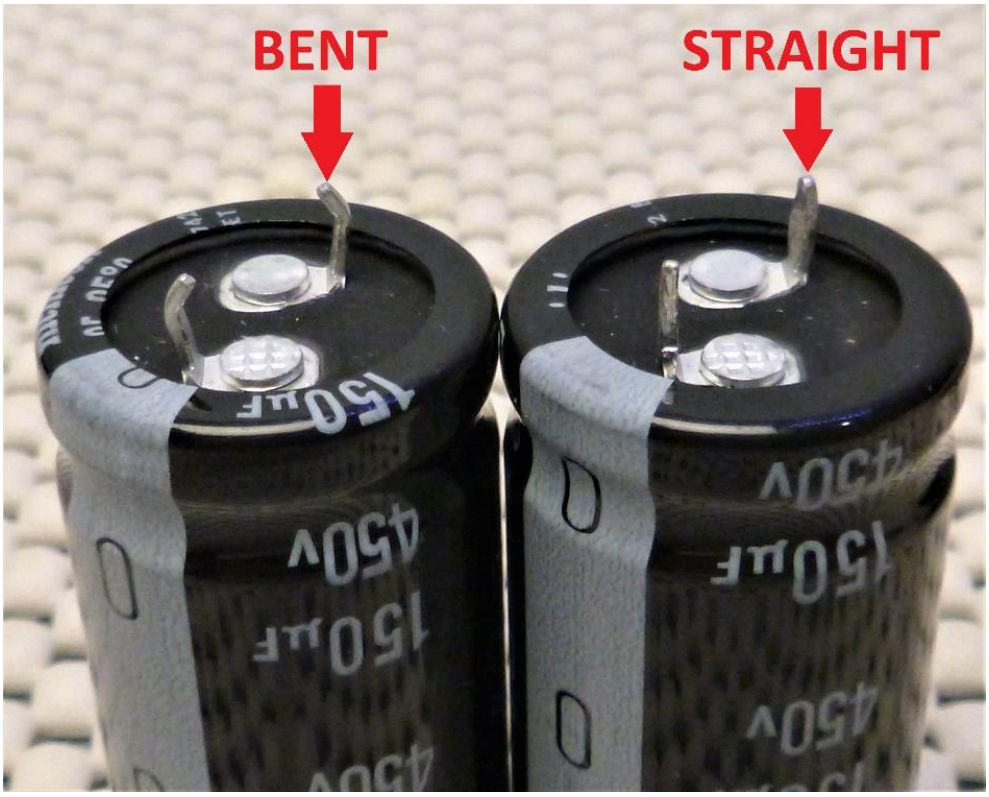


Assemble the two C10 caps to the board.

Assemble caps C4 and C15, two places each, to the board. For extra security they may be held in place with thin strip of double-sided tape.

Assemble C11, two places, to the board. For extra security they may be held in place with thin strip of double-sided tape.

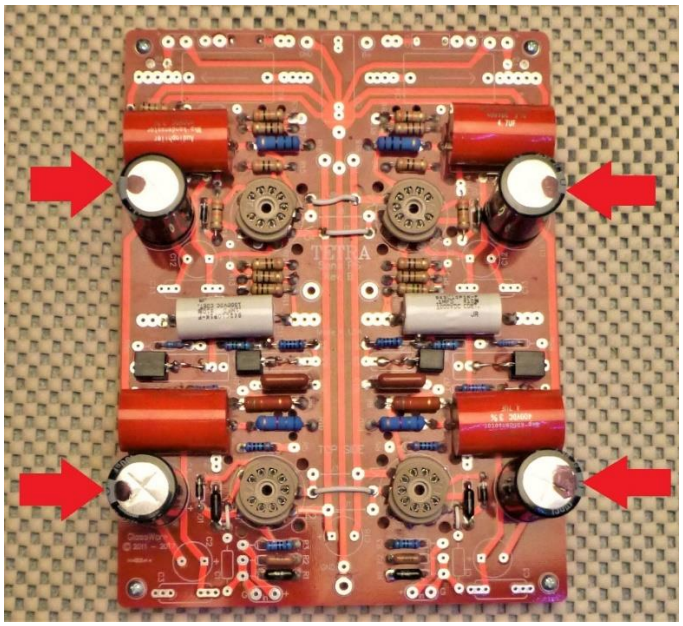
C5, and C16, two each, are assembled next. <u>These are electrolytic caps which are **polarity critical**</u>. The first thing to do is straighten the pins (they come bent from the factory) to allow easier insertion into the holes in the board, see below. Clean the pins with alcohol.



These caps are assembled with the negative (-) side set closest to outside edges of the board. As an aide to assembly you may use the following guide:

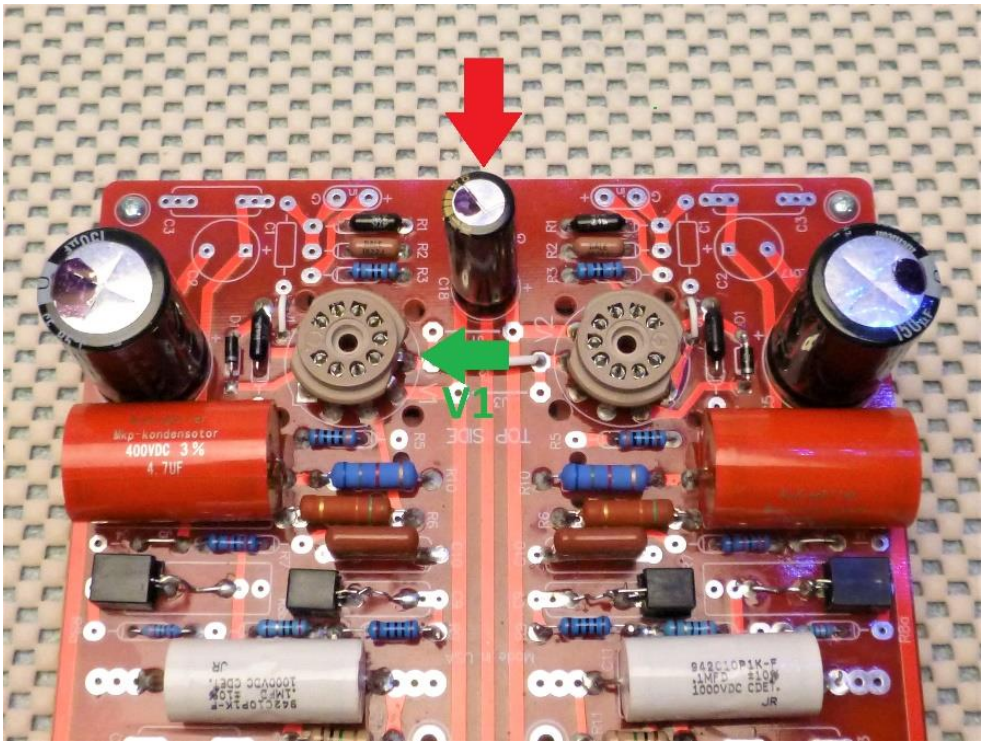
On each capacitor find the negative side. Put a dot on the top with a sharpie marker closest to the negative side.

When the caps are installed they should look like the picture below.



To keep the caps as tight to the board as possible, pull on the pins as you bend them over slightly. Solder the caps to the board.

C18 is also polarity critical. Assemble to the board with the negative side closest to V1, see below. Solder and trim.



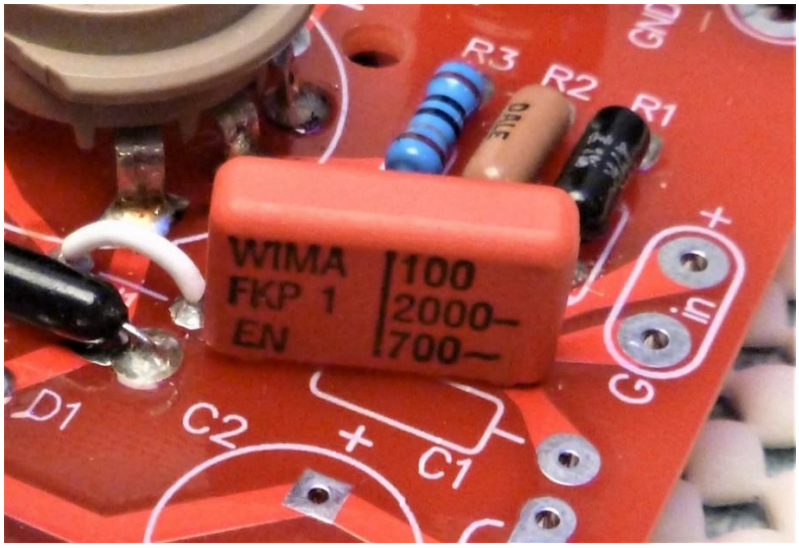
Bend the leads of both C14 caps down close the body. For extra security they may be held in place with thin strip of double-sided tape.

Assemble them to the board keeping them as close as possible to the C17 position along the centre-line of the board. This will make it easier to gain access to the screws at the corners of the board, see below.

Assemble capacitor C17 to the board.

Capacitor C1 is optional. If installed it will increase the capacitive loading on a moving magnet (MM) cartridge. There is discussion as to whether or not this is necessary in that the interconnects from the turntable might be capacitive enough.

The caps supplied with this board have a non-standard spacing but we have allowed for this in the positioning of R1 and R2, see picture. Alternatively, you may put some wires up through the board as was done with R9 to make installation and removal easier once the amp is complete.



The amplifier board assembly is complete. Proceed with the power supply board assembly.